APPENDIX A

MULTI-USE CARRIER

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FIELD OF THE INVENTION

This invention relates generally to a portable food and beverage carrier and, more specifically, a food and beverage carrier configured to display advertising.

BACKGROUND OF THE INVENTION

Food and beverage carriers used today include carriers the surface of which are unsuitable for affixing a printed advertising message. Many types of food and beverage carriers are based on paper products predominantly corrugated cardboard. The corrugated cardboard type food and beverage carriers offer surfaces amenable to presenting a printed advertising message. Unfortunately, the corrugated paper based food and beverage carriers are multi unit constructed systems and present logistical problems in storing and assembling the carriers on-site for uses at sporting events as occurs in stadiums, concerts, or other public venue areas. Besides presenting logistical difficulties in assembling the corrugated cardboard paper carriers, even when collapsed because of their multi unit construction increase the storage space required by local food vendors doing business at the public venues.

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APPENDIX A

There is a need to have a corrugated cardboard container having a plurality of panels of sufficiently large area to present printed advertising messages and is assembled from a minimum action assembly process. There is a need for the food and beverage container to be assembled from a collapsed state with a minimum of manipulations to assemble into a three dimensional usable state. The need is also for the food and beverage carrier to have sufficient structural strength to permit single hand carrying of food and beverages. The handle of the food and beverage carrier needs to have a sufficiently large panel size to present a printed advertising message. There is also a need for the food and beverage carrier to be easily disposable by incineration. There is yet another need for a carrier to function in the transporting of hazardous materials, in particular bio-hazardous materials such as with petri dishes and other microbial specimen containers. In this case, the advertising panels can be reconfigured to present printed hazardous waste warnings.

SUMMARY OF THE INVENTION

The instant invention is a multi-use carrier comprised of a single unit corrugated cardboard device that is transformed from a collapsed state into a three-dimensional carrier with a minimum of assembly actions. The corrugated cardboard employs, and is not limited by, C, B, E, and F corrugated fluting grades. Several embodiments of the invention are available for general and specific uses, including but not limited to, a food and beverage carrier, a microbiological carrier, a tool supply carrier, a chemical supply carrier, a radiochemical carrier, and a lawn and gardening supply carrier. Each carrier has a central chamber and a plurality of sub-chambers located adjacent on each side of the central chamber. The sub-chambers are designed for specific toting tasks, depending if food, biohazardous waste, chemicals, light tools, and lawn and gardening supplies are the items being transported. Each sub chamber has at least one aperture to hold a vessel or container.

The food and beverage carrier is made of corrugated cardboard. The carrier has at least two sides along the carrier periphery, a bottom, and two central walls, each central wall

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is made from two affixed half-walls. The bottom, the middle portion of each side, and the two central walls define the central chamber. Each sub-wall extends to form a handle that spans across the central chamber and has two extensions that are continuous with and forms a part of the chamber half-walls. The two sides and the center half-walls are hingeably retractable to transition from the collapsed state to the three-dimensional state. Reinforcing flanges that provide hinge-like action stabilizes each central sub-wall. Creasing lines made by a plurality of linearly positioned perforations provides easy and rapid bending of the carrier sides, walls, and horizontal surfaces. Substantially perpendicular to each sub-wall and carrier side are first and second chamber walls that are pivotably positioned and secured into the carrier bottom with tabs that insert into matching carrier slots located in the carrier bottom. Each end of the first and second chamber walls terminate on the interior of each carrier side and defines the central chamber.

Located around the central carrier chamber is a plurality of vessel apertures. There is at least one vessel aperture for each sub-chamber. The plurality of vessel apertures vary in size, shape, and number. Each vessel aperture is configured to hold items appropriate for the multi-use carrier.

An alternate embodiment of the invention is a microbiological carrier. Substantially similar to the food and beverage carrier, the microbiological carrier includes a plurality of vessel apertures, each aperture able to be varied in size, shape, and number to accommodate transport of microbe-containing vessels or microbiological related supplies.

The carrier sides and each side of the handle of the food and beverage carrier provides printable surfaces to display advertising messages, either printed directly onto the surface or affixed with printable labels.

The carrier sides and each side of the handle of the microbiological carrier provides printable surfaces to display microbial information, biohazardous information, and disposal information of microbial containers and the microbiological carrier, including incineration.

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Similarly, chemical supplies or chemical waste information is printed on the panels for the hazardous waste.

The collapsed state of the multi-use carrier is expanded and returned to the collapsed state through pivotable action along the reinforcing flanges and along a plurality of crease lines. The minimum of assembly actions required to transfer the multi-use carrier from its collapsed state to an expanded state ready-for-transport is about three assembly actions. The first assembly action is a tug on the handle to cause pivoting action along the flanges and crease lines, followed by two succeeding actions to tuck-in each tab to each slot. Each carrier can be returned to its collapsed state from its expanded state by reversing the assembly steps using finger holes to un-tuck each tab from each slot, followed by pushing the handle to cause reverse direction pivoting action along the flanges and crease lines. The collapsed multi-use carrier is then stacked in the collapsed state for efficient storage. The collapsed carriers can be reused in its re-expanded state, or in the event of soiling or spillage of chemical, radiological, and biohazardous materials on the corrugated cardboard carriers, be easily disposed by incineration.

BRIEF DESCRIPTION OF THE DRAWINGS

The preferred and alternative embodiments of the present invention are described in detail below with reference to the following drawings.

FIGURE 1 is a perspective view of the expanded food and carrier embodiment with single vessel apertures for each sub-chamber;

FIGURE 2A is a top view of the collapsed food and carrier embodiment;

FIGURE 2B is a side view of the collapsed food and carrier embodiment;

FIGURE 3 is a perspective view of the expanded microbiological carrier embodiment with multiple vessel apertures for each sub-chamber;

FIGURE 4A is a top view of the collapsed microbiological carrier embodiment;

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FIGURE 4B is a side view of the collapsed microbiological carrier embodiment;

FIGURE 5 is a top inside view of the carrier bottom showing slot locations for each multi-carrier embodiment;

FIGURE 6 a top view of the die cut of the food and beverage carrier embodiment;

FIGURE 7 is a perspective view of the die cut food and beverage embodiment partially folded to the collapsed state; and

FIGURE 8 is the die cut food and beverage embodiment almost completely folded to the collapsed state.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Figure 1 is a perspective view that shows a food and beverage carrier 10 in its expanded three-dimensional state. A handle 12 having a first extension 14 and a second extension 16, the first and second extensions 14 and 16 are fixed to a bottom 18 through a first reinforcing flange 25. Substantially parallel to the handle 12 is a first side 22 and a second side 24. Substantially parallel to the bottom 18 is a first horizontal surface 26 and a second horizontal surface 28. The first horizontal surface 26 and the second horizontal surface 28 is stabilized by a second reinforcing flange 27. Substantially perpendicular to the first horizontal surface 26 is a first half-wall 30. The first half-wall 30 is substantially perpendicular to and contacts the second side 24. In overlapping contact with the first half-wall 30 is a second half-wall 31, the second half-wall 31 being affixed to the first half-wall 30. The second half-wall 31 is substantially perpendicular to the contacts the first side 22. Substantially perpendicular to the second horizontal surface 28 is a third half-wall 32. The third half-wall 32 is substantially perpendicular to and contacts the second side 24. In overlapping contact with the third half-wall 32 is a fourth half-wall 33, the fourth half-wall 33 being affixed to the third half-wall 32. The fourth half-wall 33 is substantially perpendicular to the contacts the first side 22. The fourth half-wall 33 has a first finger hole 38. A central chamber 36 is defined by the bottom 18 and a central perimeter formed by first

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half-wall 30, the second half-wall 31, the third half-wall 32, the fourth half-wall 33, the middle section of the first side 22, and the middle section of the second side 24. The handle 12 spans across the central chamber 36 and is attached by the first horizontal surface 26 and the second horizontal surface 28 at substantially perpendicular orientations. The first horizontal surface 26 has a first vessel aperture 40 and a second vessel aperture 42. The second horizontal surface 28 has a third vessel aperture 44 and a fourth vessel aperture 46. Each vessel aperture is shown substantially in a circular shape. It is understood by those experienced in the art that the shape of each vessel aperture can vary to accommodate commonly used vessels and utensils. Each vessel aperture shape includes, besides the circular shape, and is not limited to, ovals, squares, diamonds, and X-pattern cutout shapes. It is also understood by those experienced in the art that any combination of shapes can be distributed for each aperture. For example, the first vessel aperture 40 as depicted is circular, the second vessel aperture 42 is X-shaped, the third vessel aperture 44 is oval shaped, and the fourth vessel aperture 46 is square shaped. The handle 12 has a substantially elliptical gripping aperture 48 that is substantially centrally located in the handle 12 to permit single hand carrying of the expanded carrier 10. The panels on the first side 22, the second side 24, and on each side of the handle 12 provide surfaces to receive printed advertising messages. Furthermore, the bottom 18 section within the central chamber 36, and the underside of the bottom 18 provides surfaces to receive printed advertising messages.

Figure 2A is a top view of the collapsed state of the invention 10. The handle 12 and the gripping aperture 48 are shown in geometric relationship to the first horizontal surface 26 and the second horizontal surface 28. Located centrally on the first horizontal surface 26 is the first vessel aperture 40. Substantially centrally located on the second horizontal surface 28 is the third vessel aperture 44. Continuous with the first surface 26 is the first half-wall 30 and the second half-wall 31. Visible within the first vessel aperture 40 is the first extension 14, the first reinforcing flange 25, and the second reinforcing flange 27. Visible within the

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third vessel aperture 44 is the second extension 16, the first reinforcing flange 25, and the second reinforcing flange 27. The first half-wall 30 overlaps and is affixed to the second half-wall 31. Located on the interior edge of the first half-wall 30 is a second finger hole 39. Located on the interior edge of the second half-wall 31 is a first tab 34 that projects from the second half-wall 31. The first tab 34 is partially visible in the space defined by the gripping aperture 48. It is understood by those skilled in the art that the second half-wall 31 can overlap and be affixed to the first half-wall 30. Between the first horizontal surface 26 and the first chamber wall 30 is a first perforation axis 50. The first perforation axis 50 continuously extends to and between the second half-wall 31 and the first horizontal surface 26. Substantially perpendicular to the first perforation axis 50 is a second perforation axis 54. Continuous with the second surface 26 is the third half-wall 32 and the fourth half-wall 33. The third half-wall 32 overlaps and is affixed to the fourth half-wall 33. Located on the interior edge of the third half-wall 32 is a second tab 37 that projects from the third half-wall 32. Located on the interior edge of the fourth half-wall 33 is the first finger hole 38 that projects from the fourth half-wall 33. The second tab 37 is completely visible as the handle 12 does not fold over the plane defining the first and second vessel apertures 40 and 44. It is understood by those skilled in the art that the fourth half-wall 33 can overlap and be affixed to the third half-wall 32. Between the second horizontal surface 28 and the third half-wall 32 is a third perforation axis 58. The fourth perforation axis 58 continuously extends to and between the fourth half-wall 33 and the second horizontal surface 28. Substantially perpendicular to the fourth perforation axis 58 is a fourth perforation axis 62. The handle 12 connects through the first horizontal surface 26 through the fifth perforation axis 71 to the first extension 14. Similarly, the handle 12 connects through the second horizontal surface 28 along a fifth perforation axis 74 to the second extension 16. Figure 2B shows a side view of the collapsed state of the invention 10.

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Figure 3 is a perspective view that shows another embodiment of the invention in the form of a microbiological carrier 100 in its expanded three-dimensional state. The microbiological embodiment 100 incorporates many of the same components as the food and beverage carrier 10. The handle 12 has the first extension 14 and the second extension 16 (not shown), fixed to the bottom 18 via the first reinforcing flange 25. Similarly, the second reinforcing flange 27 affixes the first horizontal surface 26 to the first extension 14 and the second horizontal surface 28 to the second extension 16 (not shown). Substantially parallel to the handle 12 is the first side 22 and the second side 24. Substantially parallel to the bottom 18 is the first horizontal surface 26 and the second horizontal surface 28. The first horizontal surface 26 and the second horizontal surface 28 is stabilized by the second reinforcing flange 27. Substantially perpendicular to the first horizontal surface 26 is the first half-wall 30. The first half-wall 30 is substantially perpendicular to and contacts the second side 24. In overlapping contact with the first half-wall 30 is the second half-wall 31, the second half-wall 31 being affixed to the first half-wall 30. The second half-wall 31 is substantially perpendicular to and contacts the first side 22. Substantially perpendicular to the second horizontal surface 28 is the third half-wall 32. The third half-wall 32 is substantially perpendicular to and contacts the second side 24. In overlapping contact with the third half-wall 32 is the fourth half-wall 33, the fourth half-wall 33 being affixed to the third half-wall 32. The fourth half-wall 33 is substantially perpendicular to and contacts the first side 22. The fourth half-wall 33 has the first finger hole 38. A central chamber 36 is defined by the bottom 18 and the central perimeter formed by first half-wall 30, the second half-wall 31, the third half-wall 32, the fourth half-wall 33, the middle section of the first side 22, and the middle section of the second side 24. The handle 12 spans across the central chamber 36 and is attached by the first horizontal surface 26 and the second horizontal surface 28 at substantially perpendicular orientations. The first horizontal surface 26 has the first plurality of microbial apertures 110 and a second plurality of microbial apertures 112. The second

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horizontal surface 28 has the third plurality of microbial apertures 114 and a fourth plurality of microbial apertures 116. Each plurality of microbial apertures is shown with a set of nine apertures of substantially equal sizes. It is understood by those experienced in the art that the number of apertures may vary, and the sizes of the apertures may vary within each plurality of microbial apertures to accommodate different sized microbial containers. The handle 12 has the substantially elliptical gripping aperture 48 that is substantially centrally located in the handle to permit single hand carrying of the expanded microbiological carrier 100. The panels on the first side 22, the second side 24, and on each side of the handle 12 provide surfaces to receive printed messages concerning biohazardous materials. Furthermore, the bottom 18 section within the central chamber 36, and the underside of the bottom 18 provides surfaces to receive printed messages concerning biohazardous materials. The biohazardous messages include microbiological information including handling procedures, warnings, and directions for disposal of the microbiological carrier 100, including incineration.

Figure 4A is a top view of the collapsed state of the microbiological carrier 100. The microbiological embodiment 100 incorporates many of the same components as the food and beverage carrier 10. The handle 12 and the gripping aperture 48 are shown in geometric relationship to the first horizontal surface 26 and the second horizontal surface 28. Located centrally on the first horizontal surface 26 is the first plurality of microbial apertures 110. Substantially centrally located on the second horizontal surface 28 is the third plurality of microbial apertures 114. Continuous with the first surface 26 is the first half-wall 30 and the second half-wall 31. The first half-wall 30 overlaps and is affixed to the second half-wall 31. Located on the interior edge of the first half-wall 30 is a second finger hole 39. Located on the interior edge of the second half-wall 31 is a first tab 34 that projects from the second half-wall 31. The first tab 34 is partially visible in the space defined by the gripping aperture 48. It is understood by those skilled in the art that the second half-wall 31 can overlap and be affixed to the first half-wall 30. Between the first horizontal surface 26 and the first chamber

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wall 30 is a first perforation axis 50. The first perforation axis 50 continuously extends to and between the second half-wall 31 and the first horizontal surface 26. Substantially perpendicular to the first perforation axis 50 is a second perforation axis 54. Continuous with the second horizontal surface 28 is the third half-wall 32 and the fourth half-wall 33. The third half-wall 32 overlaps and is affixed to the fourth half-wall 33. Located on the interior edge of the third half-wall 32 is the second tab 37 that projects from the third half-wall 32. Located on the interior edge of the fourth half-wall 33 is the first finger hole 38 that projects from the second half-wall 31. The second tab 37 is completely visible as the handle 12 does not fold over the plane defining first and third microbial apertures 110 and 114. It is understood by those skilled in the art that the fourth half-wall 33 can overlap and be affixed to the third half-wall 32. Between the second horizontal surface 28 and the third half-wall 32 is the third perforation axis 58. The third perforation axis 58 continuously extends to and between the fourth half-wall 33 and the second horizontal surface 28. Substantially perpendicular to the fourth perforation axis 58 is a fourth perforation axis 62. The handle 12 connects through the first horizontal surface 26 through the fifth perforation axis 71 to the first extension 14. Similarly, the handle 12 connects through the second horizontal surface 28 along a fifth perforation axis 74 to the second extension 16. Figure 4B shows a side view of the collapsed state of the invention 100.

FIGURE 5 shows a top inside view of the carrier bottom 18 for both food and beverage carrier 10 and the microbiological carrier 100. Figure 5 shows a first slot 150 that receives and holds the first tab 34, and a second slot 152 that receives and holds the second tab 37.

Each multi-use carrier is assembled by pulling the handle 12 upwards, causing the first and second reinforcing flanges 25 and 27 to act as hinges in which the multi-use carrier is expanded to a 3-D state. Each perforation axis serves to establish a crease line along which folding is more easily accomplished. Along each crease line, each half-wall is bent and the

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first tab 34 is placed into the first slot 150 and the second tab 37 is placed in the second slot 152, thereby securing the expanded carrier structure.

Each carrier is collapsed by inserting a finger in the first finger hole 38 and pulling the fourth half-wall 33, then inserting the finger into the second finger hole 39 and pulling the first half-wall 30. This action dislodges the first tab 34 from the first slot 150 and the second tab 37 from the second slot 152. The carrier then collapses downwards by reversing the pivotable action along the first and second reinforcing flanges 25 and 27 and along each crease line.

Figure 6 presents the die cut food and beverage embodiment. The first horizontal surface 26 is shown encompassing the first vessel aperture 40 and the second vessel aperture 42. The second horizontal surface 28 is shown housing the third vessel aperture 44 and the fourth vessel aperture 46. Along the periphery of the first horizontal surface 26 is the first perforation axis 50, the second perforation axis 54 and fifth perforation axis 71. Along the perimeter of the second horizontal surface 28 is seeing the third perforation axis 58, the fourth perforation axis 62, and the sixth perforation axis 74.

Continuous with the bottom 18 is the first side 22 and the second side 24. The first side 22 occupies a space delineated by the second perforation axis 54 and a seventh perforation axis 212. The second side 24 is defined by the space delineated by the fourth perforation axis 62, the second perforation axis 54 and an eighth perforation axis 210. The handle 12 is shown split into two sections, each section having the gripping aperture 48 located substantially central in each half section of the handle 12. Near the terminus of the handle 12 is a region for receiving glue that is equivalent to the second reinforcing flange 27. Along the seventh perforation axis 212 is the second slot 152, and along the eighth perforation axis 210 is the first slot 150. The first and second slots 150 and 152 are shown in relative position to the bottom 18. Continuous width the first horizontal surface 26 it is the first half wall 30 and the second half wall 31. The first half wall 30 houses the second finger

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hole 39 and the first tab 34. Continuous with the second horizontal surface 28 is the third half wall 32 and the fourth half wall 33. The first half wall 32 houses the first finger hole 38 and the second tab 37. Also continuous with the second horizontal surface 26 is the first extension 14, the first extension 14 also continuous with the area defining the first reinforcing flange 25. The first reinforcing flange 25 shown within the crossed-hatch area will be the gluing region for affixing to the bottom 18. Also contiguous with the second horizontal surface 28 is the second extension 16, continuous with the second extension 16 is the area defining the first reinforcing flange 25. The first reinforcing flange 28 as shown in the cross hatched area to be the region for gluing to the bottom 18. Within the two sections of the handle 12, the second reinforcing flange 27 is glued within to third regions as shown. Located on the second half wall 31 is a gluing region 182. Located on the fourth half wall 32 is a fourth half-wall gluing region 184. The second half-wall gluing region 182 affixes the second half-wall 31 to the first half-wall 30 and the fourth half-wall 184 affixes the third half-wall 32 to the fourth half-wall 33. Between the two halves of the handle 12 is a ninth perforation axis 206.

Figure 7 shows the food and beverage embodiment in a partially folded configuration. The handle 12 is shown folded about the ninth perforation axis 206 with alignment of the gripping apertures 48. The handle 12 is shown with alignment of the grouping apertures 48. The handle 12 is shown in relationship to the first horizontal surface 26, the first special aperture 40, the second half wall 31, the third half wall 32 and the third vessel aperture 44. Along perforation lines 71 and 74 and between the eighth perforation axis 212 is the first side 22. The first side 22 is pivoted about the eighth axis 212. Visible on the bottom 18 is the second slot 152. On the left side of Figure 7 is seen the first horizontal surface 26 having the second vessel aperture 42 and the second horizontal surface 28 having the vessel aperture 46 further along the top edge of the second side 24. Continuous with the first horizontal surface 26 is the first half wall 30. Continuous with the second horizontal surface 28 is fourth half

wall 33. Also continuous with the first horizontal surface 26 is the first extension 14 and continuous with the first extension 14 is the first reinforcing flange 25 that is glued to the bottom 18. Also continuous with the second horizontal surface 28 is the second extension 16, the second extension 16 continuous with the reinforcing flange 25 which is affixed to the bottom 18.

FIGURE 8 is the food and beverage embodiment of the die cut, almost completely folded to the collapsed state nearly equivalent to the collapsed state as depicted in FIGURE 2B. The ninth perforation axis 206 of the handle 12 is shown almost completely folded and affixed to itself and to the bottom side of the first horizontal axis 26 and the second horizontal axis 28. The gripping aperture 48 is housed within the handle 12. The first horizontal axis 26 houses the first vessel aperture 40 and the second horizontal surface 28 houses the third vessel aperture 44. The first horizontal surface 26 is continuous with the first half wall 30, and the second horizontal surface 28 is continuous with the third half wall. The third half wall 32 is shown housing the first finger hole 28. Also continuous with the first horizontal surface 26 is the second side 24, the second side 24 also being continuous with the second horizontal surface 38. The almost complete folding of the die cut food and beverage embodiment occurs about the eighth perforation axis 212, which is equivalent to the bottom of the second side 24.

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MULTI-USE CARRIER

ABSTRACT OF THE DISCLOSURE

A single unit cardboard device is transformed from a collapsed state into a three-dimensional multi-use carrier with a minimum of assembly actions. Each carrier has a central chamber and a plurality of sub-chambers located adjacent on each side of the central chamber. Each sub chamber has at least one aperture to hold at least one container. The cardboard device provides printable surfaces to receive advertising messages for the food and beverage carrier and information-specific messages pertaining to the chemical, radiological, and microbiological fields.

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